



## ABSTRACT OF THE DISCLOSURE

Nucleic acid and protein sequences relating to a cation channel which is sperm-specific (CatSper2) are disclosed. The CatSper2 protein is shown to be specifically expressed in sperm and to be necessary for sperm motility. Nucleic acids, vectors, transformed cells, transgenic animals, polypeptides, and antibodies relating to the CatSper2 gene and protein are disclosed. Also provided are methods of *in vitro* fertilization and contraception, methods of identifying modulators of CatSper2 activity, methods of genotyping subjects with respect to CatSper2, and methods of diagnosing and treating CatSper2-mediated disorders, including infertility.